**ESS Vocabulary**

**Basic Stuff**

First Law of Thermodynamics

Second Law of Thermodynamics

Photosynthesis

Cellular Respiration

pH

Technocentric

Anthropocentric

Biocentric

Ecocentric

Negative Feedback Loop

Positive Feedback Loop

**People**

Nixon

Rachel Carson

Gifford Pinchot

John Stuart Mill

Adam Smith

Thomas Robert Malthus

Aldo Leopold

**Events/Places**

Love Canal

Exxon Valdez

Chernobyl

Bhopal

Dust Bowl

3 Mile Island

Deepwater Horizon

Kuwati Oil Fires

Cuyahoga River

3 Gorges Dam

Aral Sea

London’s Yellow Fog

Seveso Dioxin Cloud

Earth Day

**Diseases**

Goiter

Rickets

Scurvey

Hypertension

Diabetes

Pellagra

E. coli

Cholera

Legionaries

AIDS/HIV

Tuberculosis

Smallpox

Malaria

Typhoid

**Cycles**

Phosphorus cycle

Hydrologic Cycle

Nitrogen Cycle

Sulfur Cycle

Carbon Cycle

Homeostasis

Nitrigen fixing Bacteria

Reservoir

Source

Sink

System

Closed System

Isolated System

Open System

Static Equilibrium

Steady-State Equilibrium

**Earth Science**

Core, Mantle, Crust

Geologic clock (Period, Eon)

Lithosphere

Hydrosphere

Biosphere

Atmosphere

Subduction Plate Boundary

Transform Plate Boundary

Uplift Plate Boundary

Convergent Plate Boundary

**Natural Selection & Community Ecology**

Adaptation

Disruptive Selection

Directional Selection

Stabilizing Selection

Speciation

Natural Selection

Allopatric Speciation

Sympatric Speciation

Generalist

Specialist

Genetic Diversity

Artificial selection

Competition

Population

Community

Primary Succession

Secondary Succession

Pioneer Species

Climax Community

Niche

Fundamental Niche

Realized Niche

Mass Extinction

Background Extinction

Limiting Factors

Exponential Growth

Logistical Growth

J-curve

S-curve

Population Momentum

Overshoot

Resource Partitioning

Ecotone

Resource Partitioning

Competitive Inhibition

Symbiosis

Mutualism

Parasitism

Commensalism

Density-dependent factors

Density-independent factors

K-selected species

R-selected species

Ecosystem

Resistance

Resilience

Herbivore

Producer

Autotroph

Predation

Food Chain

Food Web

Primary Consumer

2nd consumer

Tertiary Consumer

Intraspecific Competition

Interspecific Competition

External Limiting Factors

Internal limiting Factors

Endemic

Keystone species

Trophic levels

Carrying Capacity

Survivorship

Habitat

Latitudinal Gradient

Nutrients vs. energy

10% Rule

Divergent Evolution

Biotic

Abiotic

**Biomes**

Tropical Rainforest

Desert

Tundra

Temperate Deciduous Forest

**Biodiversity**

Biodiversity

Conservation Biology

Biodiversity Hot Spots

Invasive Species

Non-native Species

Species diversity

Red list

Ecological Diversity

Theory of Equilibrium of Island Biogeography

HIPPO

Threatened

**Population**

Random Distribution

Clustered Distribution

Uniform Distribution

Population Density

Rule of 70

Population Density

Total Fertility

Replacement Fertility

Demographic Transition

One Child Policy

Ecological Footprint

Emmigration

Immigration

Pre-Industrial Stage

Industrial Stage

Transitional Stage

Post-Industrial Stage

Mortality

Morbidity

Natality

Sex Ratio

Age Diagram

Fecundity

**Soil & Agriculture**

Tragedy of Common

Deposition

Soil Degradation

Weathering

Traditional Agriculture

Industrialized Agriculture

Parent Material

Leaching

Soil

Soil Formation

Soil Profile

Soil Horizons

Topsoil

Permeability

Porosity

Charge

Silt

Sand

Clay

Soil Conservation

Monoculture

Cropland

Rangeland

Desertification

Salinization

Subsistence Farming

Crop Rotation

Inter-cropping

No-till Agriculture

Aquaculture

Recombinant DNA

Biological Control

IPM

Types of Erosion

Reduced Tillage

StarLink Corn

Loam

Overgrazing

Organic Agriculture

Bacillus Thurgiensis (Bt)

Shelter Beds

Feed lots

Industrial Farming

Green Revolution

Contour Farming

Terracing

Seedbanks

Golden Rice

Irrigation

Monsanto

Pollination

Undernourishment

Overnutrition

Malnutrition

Inorganic Fertilizers

Organic Fertilizers

GMO

**Waste Management & Environmental Health**

Epidemiology

Remediation

Restoration

Reclamation

Mitigation

Composting

Recycling

Radioactive Waste

Life Cycle Analysis

Recycling Loop

Endocrine Disruptor

Biomagnification

Bioaccumulation

DDT

Radon

Lead

Bisphenol A

PBDE

Carcinogens

Teratogens

Mutagens

Incineration

Reemerging Disease

Emerging Disease

Sanitary Landfill

Open landfill

Source Reduction

Surface Impoundment

Leachate

Brownfields

Superfunds

e-waste

waste to energy (WTE)

Physical Hazards

Biological Hazards

Chemical Hazards

Cultural Hazards

Dose-Response Curve

LD-50

ED-50

Threshold

Endocrine Disruptor

Asbestos

PBDEs

Acute Exposure

Chronic Exposure

CFCs

**Water Resources**

Aquifer

Water Table

Confined Aquifer

Unconfined Aquifer

Aquifer Recharge Zone

Zone of Saturation

Zone of Aeration

Cone of Depression

Subsidence

Littoral Zone

Limnetic Zone

Benthic Zone

Profundal Zone

Epilimnion

Metalimnion

Hypolimnion

Fall Overturn

Spring Overturn

Oligotrophic

Eutrophic

Dead Zones

Water Privatization

xeriscaping

ENSO events

Turbidity

Dissolved Oxygen

Point Pollution

Non-Point Pollution

Groundwater Pollution

Consumptive Use

Hypoxia

Non-consumptive Use

Dikes

Levees

Desalinization

Waste Water Treatment

Upwelling

Downwelling

Thermocline

Continental shelves

Photic zone

Mercury in Seafood

Algae Blooms

Red Tide

Overfishing

By-catch

Driftnets

Long-line

Bottom trawling

“Fishing Down the Food Chain”

Marine Protected Areas

Levee

Primary Production

**Atmosphere & Global Climate Change**

Troposphere

Stratosphere

Mesosphere

Thermosphere

Weather

Climate

Warm Fronts

Cold Fronts

High Pressure System

Low Pressure System

Thermal Inversion

Hadley Cell

Ferrel Cell

Coriolis Effect

Photochemical Smog

Primary Pollutant

Secondary Pollutant

EPA’s Criteria Pollutant

Carbon Monoxide

Sulfur Dioxide

Nitrogen Dioxide

Tropospheric Ozone

Atmospheric Pressure

Carbon Offsets

Aerobic

Anaerobic

Ice Core

Atmospheric Deposition

CFC’s

Industrial Smog

Hole in the Ozone

Acid Deposition

Indoor Air pollution

Greenhouse Effect

Greenhouse Gasses

Radiative Forcing

Milankovitch Forcing

El Nino (ENSO)

La Nina

Proxy Indicator

Heat Island

VOCs

**Energy**

Renewable

Non-Renewable

Crude Oil

Natural Gas

Strip mining

Subsurface Mining

Mountaintop Removal

Petroleum

Primary Oil Extraction

Secondary Oil Extraction

R/P ratio

Hubbert’s Peak

“Peak Oil”

Tar Sands

Oil Shale

Methane Hydrate

Coal

Fossil Fuel

OPEC

Co-generation

Nuclear Energy

Nuclear Fission

Breeder Reactors

Nuclear Fusion

Fuel Rods

Biomass energy

Bio-power

Hydroelectric power

Run-of-River approach

Hydrogen Fuel Cell

Passive Solar Energy

Active Solar Energy

PV Cell (photovoltaic cell)

OTEC

Acid Drainage

Anthracite

Lignite

Peat

Bituminous Coal

Synfuels

Half Life

Wind Energy